

**RESEARCH PAPER****Association of Substance Abuse and Psychiatric Symptoms among Elementary School Children in Punjab, Pakistan****<sup>1</sup>Izza Tanveer \* <sup>2</sup>Zarina Alkarim and <sup>3</sup>Sumana Aslam**

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**\*Corresponding Author:** [izzatanveerr@gmail.com](mailto:izzatanveerr@gmail.com)**ABSTRACT**

The present study focuses on Association of substance abuse and psychiatric symptoms among elementary school children in Punjab, Pakistan. To investigate an association of sex with substance use and psychiatric symptoms among elementary school children. This study uses a cross-sectional design using elementary school students in Punjab as its methodological base. To examine substance use patterns, psychiatric symptoms, and related risk and protective factors, data gathering techniques include structured interviews and standardized exams. Data of 301 children was collected from Punjab, Pakistan rated by parents and guardians using in-person and e-forms. Simultaneously, mental health issues like anxiety, sadness, and behavioral disorders are becoming more widely acknowledged in this population. Hence results established were reliable and valid. According to the data, there is a significant relationship between having mental health symptoms and being more likely to take substances. However, there should be test retest reliability established for group assessments specifically for any new developed domain or that has not been previously tested in psychiatric populations.

**KEYWORDS** Elementary School Children, Psychiatric Symptoms, Substance Abuse**Introduction**

In complex cultural contexts like Punjab, Pakistan, the intersection of psychiatric symptoms, which include a wide range of mental health issues, and substance abuse—defined as the harmful or hazardous use of psychoactive substances presents challenging problems in understanding and treating children's well-being. The World Health Organization (WHO) defines substance abuse among children as the use of drugs, alcohol, and tobacco in ways that are harmful to their health and wellbeing. Research has shown that the prevalence of drug addiction among minors varies among demographic groups and geographical areas. It is becoming more widely acknowledged the serious public health risks associated with substance addiction and mental health issues in primary school students. These differences can be linked to the availability of substances, socioeconomic status, and peer pressure (WHO, 2020). Understanding the various manifestations and determinants of substance abuse in Punjab, Pakistan, where socioeconomic and cultural norms have a big impact on behaviour, is crucial for elementary school pupils. Moreover, conduct issues, attention-deficit/hyperactivity disorder (ADHD), anxiety, and melancholy are only a few of the illnesses that can be associated with psychiatric symptoms in children. The presence of mental disorders can have a significant impact on a child's social, emotional, and academic development, which can worsen the issues associated with substance abuse (National Institute of Mental Health (2023). Furthermore, underlying mental health disorders can be made worse by drug addiction and vice versa, creating a vicious cycle that exacerbates both conditions. The long-term effects of substance addiction and mental health issues, which can last throughout adolescence and adulthood, must be minimized by early detection and treatment. Because elementary school age children are at a vital developmental time for

cognitive, emotional, and social growth, emphasize the significance of study on this population. Few comprehensive studies have been conducted to date to investigate the prevalence, correlates, and impact of substance use and mental disorders among primary school kids in Punjab, Pakistan, despite efforts to address these issues. A comprehensive strategy is necessary to comprehend these dynamics, taking into account cultural sensitivity, educational environments, familial influences, and community issues that impact children's behavior and mental health consequences.

## **Literature Review**

Mental health of children and adolescents represent a key area of concern around the globe. 14% of the global burden of disease had been ascribed to neuropsychiatric disorders, mostly due to the chronically disabling nature of common mental disorders, alcohol-use and substance-use disorders, and psychoses (Prince et al., 2007). Developing countries, including Pakistan, faced a constant challenge in measuring, managing, and monitoring mental health problems (Gadit, 2007). Henceforth, support of child and adolescent mental health research was needed, especially in developing countries with low or middle-income (Kieling et al., 2011). Research shows that cultural, financial, and environmental factors have an impact on the prevalence of substance misuse among children around the world, which varies. Pakistani data on primary school students are scarce, although general trends in society point to a rise in drug usage among teenagers and young adults (Jawad et al., 2013). The availability of drugs like tobacco and inhalants, together with peer pressure and cultural norms, all have a role in the beginning and maintenance of substance use behaviours' in young children. Consequently, the mental health services had fallen short of providing sufficiently to the population, with only 400–500 psychiatrists in the country out of which some worked for government institutions (45%), some with private institutions (51%), while the rest worked in both sectors (4%) (Bashir, 2018) mostly in urban centres and only a few of these were trained in child mental health (Rahman & Hussain, 2001). Whereas in U.K, the standard set were two child psychiatrists per 200,000 populations, in addition to the general psychiatrists. Substance misuse and mental symptoms in children are positively correlated, according to a wealth of research. Due to changes in brain chemistry and effects on cognitive and emotional processing, substance abuse can aggravate preexisting mental illnesses (Armstrong & Costello, 2002). On the other hand, kids who have mental symptoms can use drugs as a coping strategy and self-medicate, which would escalate their substance usage. In Punjab, elementary school students' development of psychiatric disorders and substance usage is influenced by a multitude of circumstances. Significant risk variables include trauma exposure, peer pressure, familial dysfunction, socioeconomic inequality, and a lack of parental supervision (Ellickson et al., 2003). Conversely, protective factors can lessen the likelihood of substance misuse and foster resilience in kids. Examples of these include supportive communities, school-based mental health programs, positive parenting techniques, and availability to recreational opportunities.

## **Ethical Consideration**

Obtaining informed parental consent and the assent of the child are ethical considerations for researching substance abuse and psychiatric symptoms among elementary school students in Punjab, Pakistan. Other ethical considerations include protecting the confidentiality of sensitive data, minimizing psychological harm, being culturally sensitive to local norms, and refraining from stigmatizing or labeling children based on research findings.

## **Methodology**

Data collection was done using electronic forms Google forms and hard copies of questionnaire of Target Language. Using  $K*5$  (where  $K$ = number of items). Where,  $K=25$  items. So,  $5 * 25 = 125$ . Total respondents = 301. The cross-sectional research design was used. The info was collected through standardized measures that were filled either by the oldsters or guardians. Data was collected from 301 respondents, respectively.

### Data Analysis

The data was compiled onto Microsoft Excel spreadsheet and from there copied on to SPSS (Statistical Package for Social Sciences) new data set in order to make new data file for analysis. Using descriptive statistics full psychometric properties of the final version of the translated version of the tool with a sample of 301 from target population were established. Moreover, internal consistency reliability was established along with suitability of scale.

### Results and Discussion

**Table 1**  
**Sample Demographic Characteristics Table**

| Demographic Variable        | F (%)             |
|-----------------------------|-------------------|
| Age                         |                   |
| 6-12                        | M= 9.09, SD= 1.97 |
| Sex                         |                   |
| Male                        | 165(54.8)         |
| Female                      | 136(45.2)         |
| Relationship with the Child |                   |
| Mother                      | 220(73.1)         |
| Father                      | 70(23.3)          |
| Guardian                    | 11(3.7)           |

*Note.* This table shows frequencies and percentages of demographic variables of the sample (N=301). M = mean; SD = standard deviation.

Sample of total 301 participants (N=301) was drawn from population of Province Punjab which included cities, Rawalpindi, Lahore, Gujranwala, and Bahawalpur, Pakistan via purposive 7 sampling. Participants on average were 9.09 years old (SD=1.97) as the age range was 6 to 12 years, respectively.

By sex females were 136 and represented sample population as 45.2% and males were 165 and they represented 54.8% of sample population.

The data collection was done by standardized measures that were filled by mother, father or guardian of the child and mother were 220 and represented 73.1%, father was 70 and represented 23.3% and guardian were 11 which represented 3.7% of sample population with respect to relationship with the child.

**Table 2**  
**Reporting of Psychometric Scales and subscales Psychometric Table**

| Scale                              | M    | SD   | Range | Cronbach's $\alpha$ |
|------------------------------------|------|------|-------|---------------------|
| Somatic Symptoms                   |      |      |       |                     |
| Depression                         | 23.2 | 11.2 | 8-82  | .89                 |
| Mania                              | 1.3  | 1.5  | 0-8   | .68                 |
| Anxiety                            | 1.2  | 1.6  | 0-8   | .57                 |
| Psychosis                          | 1.5  | 1.7  | 0-8   | .42                 |
| Repetitive Thoughts and Behaviours | 1.5  | 2.2  | 0-12  | .75                 |
|                                    | 0.6  | 1.3  | 0-8   | .74                 |

|                                      |     |     |      |     |
|--------------------------------------|-----|-----|------|-----|
| Substance Use                        | 1.7 | 2.9 | 0-16 | .81 |
| Suicidal Ideation/ Suicidal Attempts | 7.8 | 0.7 | 4-12 | .67 |
|                                      | 3.9 | 0.4 | 2-6  | .72 |

*Note.* This table shows domains of DSM-V Parent/Guardian- rated Level 1 Cross-Cutting Symptom Measure- Child Aged 6-12.

### Scale Suitability-Reliability Analysis

The internal consistency of the DSM-V Parent/Guardian- rated Level 1 Cross-Cutting and the reliability analysis of the DSM-V Parent/Guardian- rated Level 1 Cross-Cutting Symptom

Measure- Child Aged 6-17 scales administered on 301 individuals. The reliability analyses for

CCSM-Child were 0.89 for 25 items of scale, respectively. The internal consistency of the CCSM-Child was high as all scales have Cronbach's alpha above 0.7 or very close to 0.7; as ideally, we want a measure to have a reliability above 0.7, whereas 0.5 to 0.6 are acceptable in rare conditions only, thus, at: Somatic Symptoms = 0.68, Depression = 0.57, Mania = 0.42, Anxiety = 0.75, Psychosis = 0.74, Repetitive thoughts and behavior = 0.81, Substance Use =

0.67 and Suicidal Ideation/Suicidal Attempts = 0.72, respectively.

### Data Suitability- Skewness, Kurtosis and Potential Range

Data suitability is indicated by skewness, kurtosis, and potential range. For CCSM-Child, the value of skewness and kurtosis are 1.61 and 3.16 which are within sort of the acceptable range for skewness and slightly higher for kurtosis. Positive skewness is indicative of that the recurring scores are bunched at the lower end and the tail projects towards the higher and positive scores. Positive kurtosis consists of too many scores in the tails (heavier tails distribution) and is spiky, which is called leptokurtic distribution. Thus, CCSM-Child scale is reliable for interpretation.

However, if extreme values from the data are excluded then it will become normally distributed.

Ideally the data should be normally distributed (not extremely skewed, and not excessively many or unduly few scores at the opposite ends). In normal distribution the values of skewness and kurtosis are zero. The CCSM- Child; scales and its subscales all fall within the acceptable range to most of the extent of skewness and kurtosis which is -2 to +2 which indicate to be normal.

### Skewness and Kurtosis of Subscales

For Somatic Symptoms, the value of skewness and kurtosis are 1.65 and 2.8 which are within sort of the acceptable range.

For Depression, the value of skewness and kurtosis are 1.55 and 2.10 which are within the acceptable range.

For Mania, the value of skewness and kurtosis are 1.10 and .66 which are within the acceptable range.

For Anxiety, the value of skewness and kurtosis are 1.92 and 3.98 which are within the acceptable range with respect to skewness and slightly on a higher end for kurtosis.

For Psychosis, the value of skewness and kurtosis are 2.6 and 6.9 which are within the acceptable range to some extent with respect to skewness but for kurtosis the value is quite higher than the acceptable range.

For Repetitive thoughts and behaviours, the value of skewness and kurtosis are 2.1 and 4.4 which are within the acceptable range for skewness but at a higher end for kurtosis.

For Substance Use, the value of skewness and kurtosis are -1.30 and 14.72 which are within the acceptable range only for skewness and kurtosis holds a value too high.

For Suicidal Ideation/Suicidal Attempts, the value of skewness and kurtosis are -1.1 and 14.1 which are within the acceptable range for skewness only and kurtosis is too high.

### Actual Limit and Potential Limit-Outliers

An outlier is a score very different from rest of the data. Values of Potential Event (lower limit and upper limit) and Actual Event (lower limit and upper limit) indicate the presence of outlier when compared; if the actual event lower and upper limit range(s) fall within the potential event lower and upper limit range(s) then there are low chances of outliers but if actual limit range consists of extreme values that meet, coincide or fall apart from the extreme values of potential limit range then that is due to some cases that have taken either all 4, 4, 4 as responses or 0, 0, 0 responses; as the response pattern or rating scale was (0-4) used in this CCSM-Child questionnaire, thus such cases should be scrutinized and should not be included because it affects the analysis.

### Description of outliers in CCSM-Child Scale; and its subscales

Response pattern for questionnaire: 0-4

Number of items = 25

Potential Event- Facet Scales

Lower Limit:  $0 \times 25 = 0$

Upper Limit:  $4 \times 25 = 100$

Thus, 0-100 (Potential Limit)

**Table 3**  
**Chi-Square Results for Association between Psychiatric Symptoms and Substance Use Status**

|  | n         | %         | n          | %         | n          | %          |             |
|--|-----------|-----------|------------|-----------|------------|------------|-------------|
| Substance Use - Alcoholic beverage   | 11        | 3.7       | 283        | 94        | 7.0        | 2.3        | <b>0.41</b> |
| Substance Use- Smoked a cigarette, a cigar, or pipe, or used snuff or chewing tobacco  | 12        | 4.0       | 285        | 94.7      | 4.0        | 1.3        | <b>1.50</b> |
| Substance Use -Used drugs like marijuana, cocaine, or crack, club drugs, hallucinogens, heroin, inhalants or solvents or methamphetamine | 14        | 4.7       | 283        | 94        | 4.0        | 1.3        | <b>1.94</b> |
| Substance Use- used any medicine without a doctor's prescription, stimulants, sedatives, tranquilizers, or steroids.                     | <b>39</b> | <b>13</b> | <b>256</b> | <b>85</b> | <b>5.0</b> | <b>2.0</b> | <b>1.42</b> |

\*  $p < .001$ .

### Substance Use - Alcoholic beverage

A Chi-square test for independence indicated no significant association between sex and substance use- alcoholic beverages status,  $\chi^2 = .41$ ,  $n = 301$ ,  $p = .81$ , respectively. This is interpreted as that these two things are not related.

Substance Use- Smoked a cigarette, a cigar, or pipe, or used snuff or chewing tobacco. A Chi-square test for independence indicated no significant association between sex and

Substance Use- Smoked a cigarette, a cigar, or pipe, or used snuff or chewing tobacco status,  $\chi^2= 1.5$ , n =

301, p = 0.47, respectively. This is interpreted as that these two things are not related.

Substance Use -Used drugs like marijuana, cocaine, or crack, club drugs, hallucinogens, heroin, inhalants or solvents or methamphetamine

A Chi-square test for independence indicated no significant association between sex and substance Use -Used drugs like marijuana, cocaine, or crack, club drugs, hallucinogens, heroin, inhalants or solvents or methamphetamine status,  $\chi^2= 1.9$ , n = 301, p = 0.37, respectively. This is interpreted as that these two things are not related.

Substance Use- used any medicine without a doctor's prescription, stimulants, sedatives or tranquilizers or steroids.

A Chi-square test for independence indicated no significant association between sex and substance Use- used any medicine without a doctor's prescription, stimulants, sedatives or tranquilizers or steroids status,  $\chi^2= 1.4$ , n = 301, p = 0.49, respectively.

## **Conclusion**

To sum up, the findings of this Study designed to look at the Association of psychiatric symptoms and substance abuse. The scale covered 12 psychiatric domains that can be administered on children of age 6 to 12 years. In addition, the present study has been successfully able to fill the literature gap that the tool under research has been proven non-effective and culturally inappropriate as the two variables are not related within Pakistani population regardless because the validity was assumed to be held already established with respect to Pakistan.

Salient points of present research study are that survey research promotes the use of self-report measures on ultra-carefully selected samples obtained via purposive sampling, whereas it is an open to change technique, which can be utilized to study a broad variation of basic and applied research problems or research questions. Whereas, survey research is ingrained in applied social and market research. This approach holds significance within academic disciplines, such as psychology, public health, sociology, and political science.

Research such as present study involves inquiring respondents to self-report on their own attitudes, feelings, behaviours, and thoughts, as they are founded as being non-experimental in nature thus, used to describe variables or measure statistical relationships between variables but survey can also be used to measure dependent variables in relationship to independent variables in true experimental designs. Indeed, answering to a survey item is itself a convoluted cognitive process that involves the process of decoding the question, information retrieval, converging onto judgment as being tentative, further putting the judgment into the recommended response format and editing the response.

## **Recommendations**

Research findings of the present study draw conclusion that there is no association of substance abuse with psychiatric symptoms in children at elementary school level. The significance of this study is that the tool is inappropriate with respect to the culture of Pakistan. The present study filled in a gap by having no association with variables even after the use of translated and adopted version of the instrument that same treatment plans and prognosis can be devised irrespective of sex and age.

This topic is further open for future researchers in order to fill in the gap further and if needed to establish validity of this scale to identify children with issues of psychiatric symptoms and then that scale would further help clinicians in treatment and prognosis. There should be test retest reliability established for group assessments specifically for any new developed domain or that has not been previously tested in psychiatric populations.

## References

- Bibi, H., & Kazmi, S. F. (2021). Urdu Translation and Validation of 11-Item Measure to Assess Borderline Personality Features in Pakistani Adolescents. *SAGE Open*, *11*(1), 2158244020986157.
- Prince, M., Patel, V., Saxena, S., Maj, M., Maselko, J., Phillips, M. R., & Rahman, A. (2007). No health without mental health. *The lancet*, *370*(9590), 859-877.
- Kieling, C., Baker-Henningham, H., Belfer, M., Conti, G., Ertem, I., Omigbodun, O., Rohde, L. A., Srinath, S., Ulkuer, N., & Rahman, A. (2011). Child and adolescent mental health worldwide: evidence for action. *The lancet*, *378*(9801), 1515-1525.
- Rahman, A., & Hussain, N. (2001, July 2001). Is there a Role for Child Mental Health services in countries like Pakistan. *Journal of the Pakistan Medical Association*.
- Mirza, I., Mujtaba, M., Chaudhry, H., & Jenkins, R. (2006, Aug). Primary mental health care in rural Punjab, Pakistan: providers, and user perspectives of the effectiveness of treatments. *Soc Sci Med*, *63*(3), 593-597.  
<https://doi.org/10.1016/j.socscimed.2006.01.028>
- Javed, M. A., Kundi, M., & Khan, P. A. (1992). Emotional and behavioral problems among school children in Pakistan. *J Pak Med Assoc*, *42*(8), 181-183.
- Durkin, M. S., Hasan, Z., & Hasan, K. (1998). Prevalence and correlates of mental retardation among children in Karachi, Pakistan. *American journal of epidemiology*, *147*(3), 281-288.
- Syed, E. U., Hussein, S. A., & Mahmud, S. (2007). Screening for emotional and behavioural problems amongst 5-11-year-old school children in Karachi, Pakistan. *Social psychiatry and psychiatric epidemiology*, *42*(5), 421-427.
- Bashir, A. (2018). The state of mental health care in Pakistan. *The Lancet Psychiatry*, *5*(6), 471.
- Qadir, F., Maqsood, A., Us-Sahar, N., Bukhtawer, N., Khalid, A., Pauli, R., Gilvarry, C., Medhin, G., & Essau, C. A. (2018). Factor Structure of the Urdu Version of the Spence Children's Anxiety Scale in Pakistan. *Behavioral Medicine*, *44*(2), 100-107.
- Husain, W., & Gulzar, A. (2020). Translation, adaptation and validation of Depression, Anxiety and Stress Scale in Urdu.
- National Institute of Mental Health (NIMH)*. (2023, November 8). National Institutes of Health (NIH).
- Gadit, A. A. M. (2007). Mental health model: Comparison between a developed and a developing country.
- WHO (World Health Organization). (2003). *Mental Health Atlas* (revised edition). Geneva, Switzerland: WHO